

## ABILITIES, EXPERIENCES AND PERCEPTIONS OF LEARNERS TOWARDS THE USE OF ICT IN A BLENDED LEARNING ENVIRONMENT

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### Abstract

The Open University Malaysia (OUM) is an open and distance learning (ODL) institution which caters to the need of in-service teachers and other learners who are pursuing their higher education. To meet this need, it offers both undergraduate and postgraduate degree programmes which emphasize a heavy use of ICT and are delivered via a blended mode. Half of the total learner population enrolled in these programmes are in-service teachers. For these teacher-learners to succeed in their respective programmes, they are expected to have the right attitude towards the use of ICTs for learning, and to optimize the ICT usage. It is hoped that the computer skills and knowledge gained through the programmes would help them to perform more effectively in their daily teaching activities and to inspire and motivate their students to improve computer literacy.

The study aims to determine the "teacher-learners' perceptions of the use of ICT towards learning in OUM and to examine their levels of skills and experiences, with a view to identifying areas for enhancing the effectiveness of e-learning in a blended learning environment. A survey methodology was employed, involving a random sample of 457 undergraduate learners, comprising of 365 teacher-learners and 92 learners from the open market.

The study found that between 40-55% of the teacher-learners were able to use word processing, presentation manager, emails and bibliographic database software applications on their own without any assistance. The study also found that nearly 75% of the teacher-learners had used Online Forum. The teacher-learners held a fairly positive view of the different advantages that ICT can bring to learning, while at the same time they showed a relatively strong preference for learning with traditional methods, implying that they also question the value of ICT for learning. Finally, the study found that the significant predictors of positive perception towards learning with ICT, were: *ability to use email* and the *experience of using MyLMS*, *online discussion forums* and *academic support via email* for teacher-learners with an adjusted R-square of 20%. For the open market learners, the significant factors were: *ability to use bibliographic database* and *experience of using myLMS* with an adjusted R square of 25%. This implies that in order to encourage OUM teacher-learners and other learners to use ICT in learning, it is vital to upgrade their ICT skills and provide them with the means to gain experience in e-learning through the institution's learning management system, MyLMS.

### Keywords

Teacher-learners, Open market learners, Abilities, Experience, Perceptions of ICT, Blended learning environment, Opportunities enhanced by ICT, Predictors of positive perception.

# **1 INTRODUCTION**

In OUM, degree programmes which are offered to in-service teacher-learners and other learners, emphasize a heavy use of ICT and are delivered via a blended mode. Thus, the Internet together with other forms of technology is adopted by OUM as one of the main instructional and learning means to accommodate the pedagogical shift from the teacher-dominated role to the learner-centred role. In particular, Internet is adopted to enhance time-tabling of courses, assessment results, tutor feedback to learners, and many others. ICT is also used to deliver the academic components of a course by making it more flexible. E-learning, which is one of the three components of OUM's blended delivery mode, is made available 24 hours, seven days a week through the Learning Management System (or MyLMS). MyLMS which integrates e-mails, discussion forums, chats etc., provides seamless support for learners. It serves as an e-learning platform for interaction among the university community members, which include learners, tutors, subject-matter experts, academic and non-academic staff.

Teacher-learners undergoing degree programmes are expected to have the right attitude towards the use of ICTs for learning, and to optimize ICT usage. It is intended that the computer skills and knowledge gained through the programmes would also help the teacher-learners to perform their daily teaching activities more effectively and to inspire and motivate their own students to improve computer literacy level. However, it is common to encounter a situation where new technologies like ICT applications and tools which are introduced for public use, are under-utilized. On many occasions, this situation is contributed by the fact that new technologies are introduced without due regards for users' acceptance. In the ODL environment, such as in OUM where learners have the option of taking up the face-to-face tutorials, self-managed learning, e-learning or a combination of the three modes, the same situation of under-utilizing ICT tools and applications can also occur.

## **2 OBJECTIVES OF STUDY**

Given the ICT facilities in OUM, it is pertinent to find out the extent to which learners are using them to improve learning outcomes. The present study was thus carried out to achieve the following objectives: (a) to obtain a baseline assessment of teacher-learners' abilities and experiences in using ICT, (b) to obtain teacher-learners' views on the opportunities that can be enhanced by ICT, particularly its actual and potential role in learning and education, (c) to identify the significant predictor variables for predicting "positive perception of using ICT for learning and education", and (d) to highlight the similarities and differences in ICT use in learning and education between the teacher-learners and the open market learners.

## **3 SIGNIFICANCE OF THE STUDY**

This study is important to OUM in many respects. Firstly, getting learners' inputs on the role of ICT in learning is an important component of the university's strategic plan. Very often learners' needs are not matched with the objectives of the university. Secondly, technologies change rapidly and the differential uptakes of the technologies may result in a mismatch between the university and the learners. Thirdly, when it involves a change in the university's policy, such as increased use of e-learning, the acceptance level between learners and staff may differ. Finally, measuring change in learners' ICT skills and attitude towards the use of ICT in learning and education will help the university in decision making.

## **4 METHODOLOGY**

### **4.1 The sample and profile of respondents**

The sample selected for the study consists of 365 teacher-learners and 92 learners from the open market, giving a total of 457 learners. The sample of learners was selected from the states of Pahang, Kelantan and Sabah. The majority of the learners in the sample was females (75%), above 26 years old (69%) and married (90%). In terms of entry qualifications, slightly less than half of the students (44%) had the equivalence of SPM-level while the rest had the equivalence of STPM level or diploma certificates.

#### 4.2 The Research Instrument/questionnaire

The research instrument used in the study is the questionnaire adapted from the SPOT-PLUS Project, 2004 conducted by the Directorate General for Education and Culture of the European Commission (ECEC) in 2004 (<http://www.spotplus.odl.org/questionnaire>). The questionnaire is divided into five (5) sections.

The first section collects information on learners' demographic variables, such as gender, race, programme, CGPA, etc.

The second section measures learners' ability in using 4 standard applications (Word Processor; Email Program; Presentation Manager; and Bibliographic Database) using 3 scales, that is, *1: I can do this by myself; 2: I would need some help to do this and 3: I have never done this type of task.*

The third section measures learners' experience in 4 different applications, (Interactive websites; Online Discussion Forum; Video Conferencing and myLMS) using 4 scales, that is *1: several times; 2: Once; 3: Never; 4: Never heard of this.*

The fourth section contains 20 questions which were used to tease out learners' attitudes towards the use of ICT in education. The 20 questions were divided into two factors: "positive perception of use of ICT in education" and "positive perception of use of traditional method / negative perception of use of ICT in education". Learners were asked to answer based on 4 levels of agreement, *1: I totally agree; 2: I mostly agree; 3: I mostly disagree; and 4: I totally disagree.* One additional scale, *5: I do not know* was also provided.

The fifth and final section of the questionnaire contains 17 questions, offering a list of opportunities that might be enhanced by ICT. The respondents were asked to indicate how important in their opinion each item was on a scale from *1 (no importance at all) to 4 (very important).* An additional scale of *5 (I do not know)* was also provided. The questions were grouped into three factors. The first factor was labelled 'Facilitating contact and information exchange', the second factor, 'Promoting access to higher education' and the third factor, 'Changing the learning process and learning outcomes'.

#### 4.3 Data Collection

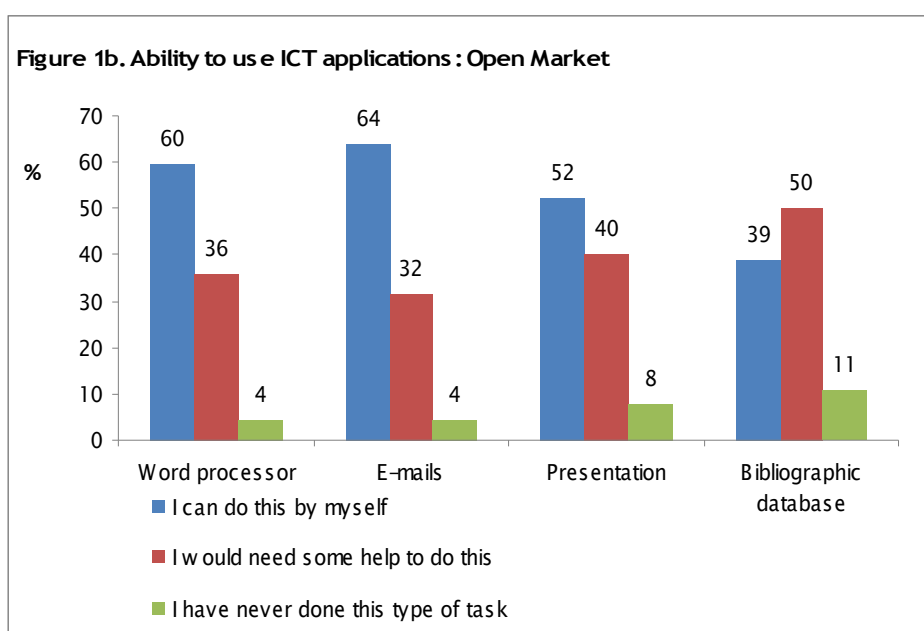
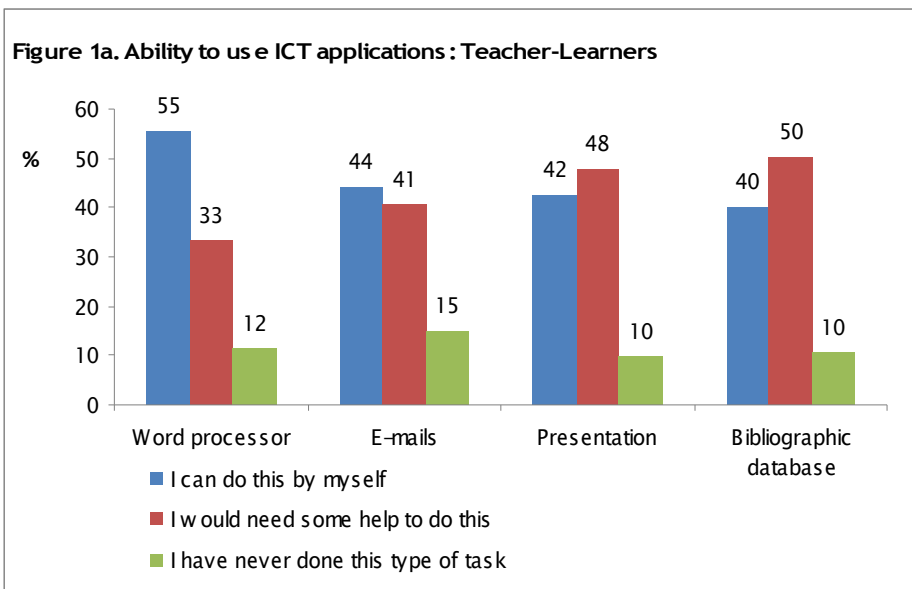
The printed questionnaires were distributed to the learning centres of the three selected states, and administered to the selected learners of different programmes and semesters of study after their tutorial sessions. The questionnaires were collected immediately after the learners had completed them.

## 5 ANALYSIS AND RESULTS

### 5.1 Abilities of using ICT applications

The study found that 55% of the teacher-learners are able to use 'word processing' by themselves (Figure 1a). The proportions of teacher-learners who had similar ability were less for the other three applications that is, 44% for emails, 42% for presentation and 40% for bibliographic database. Figure 1a also indicates that 33%-50% of the learners would need some help to use the ICT applications. Surprisingly, the survey revealed that a small proportion of about 10%-15% of the teacher-learners had never used any one of the four ICT applications.

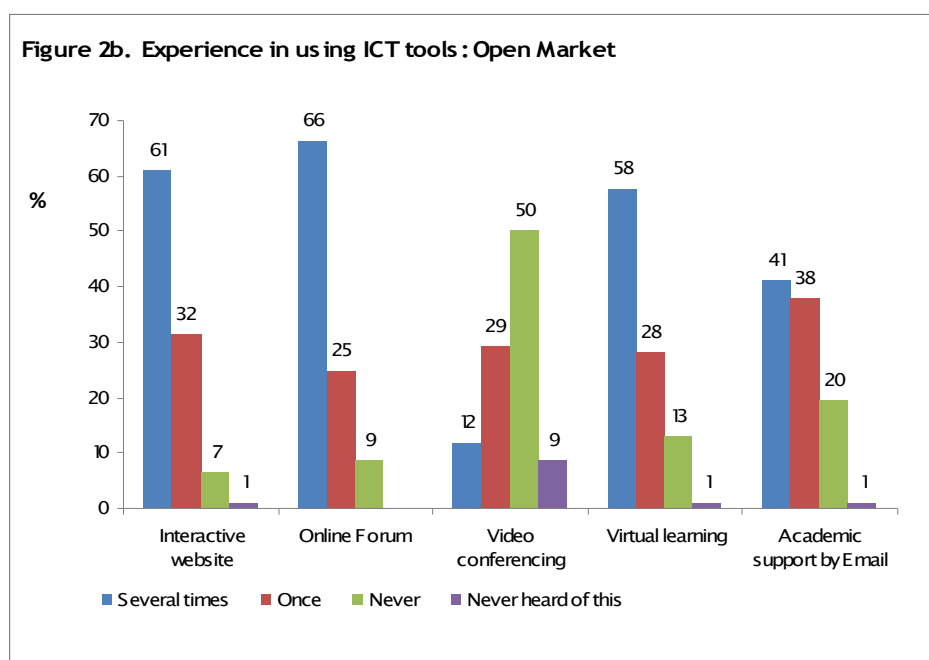
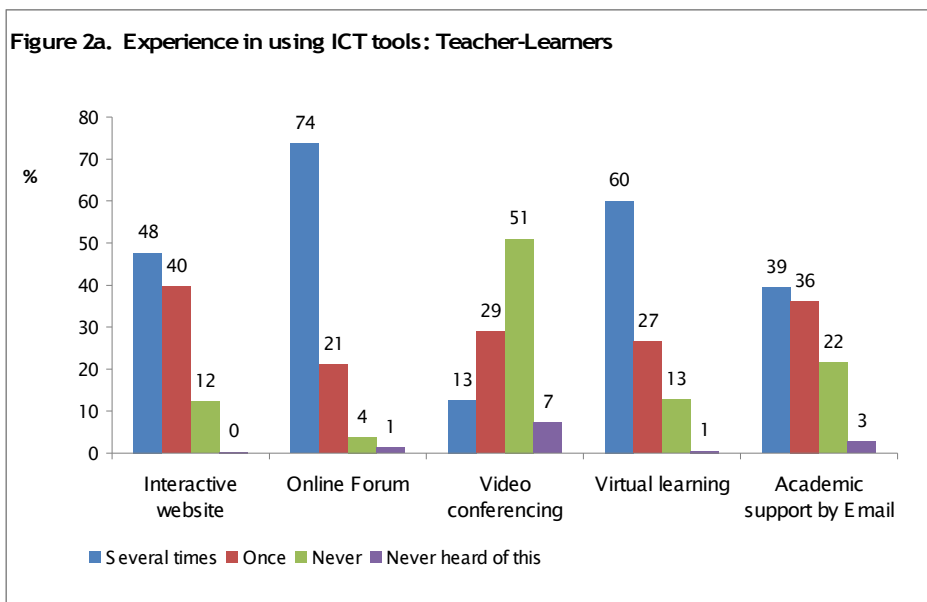
Another striking feature captured in the survey is that the ability to use the ICT applications is lower for the teacher-learners group as compared with the learners from the open market (Figure 1a and Figure 1b) for three of the four applications studied, namely word processing, e-mails and presentation manager. As for the bibliographic database, teacher-learners managed to secure a one percentage point higher as compared to the open market learners.



## 5.2 Experience to use ICT tools

As shown in Figure 2a, only two of the four ICT tools studied were used several times by the majority of the teacher-learners, and these two tools were *online forum* (74%) and *virtual learning or MyLMS* (60%). *Interactive websites* and *academic support by emails* were used several times by 48% and 39% of the teacher-learners, respectively. However, a small proportion of the teacher-learners have never used *academic support by emails* (25%), *virtual learning* (14%), *interactive websites* (12%) and *online forum* (5%).

Overall, in terms of frequency of use, both the open market and teacher-learners fare almost equally for *virtual learning* and *academic support by emails*. More of the teacher-learners use the *online forum* as compared with open market learners, but less of them use the *interactive websites* (Figure 2a and Figure 2b).



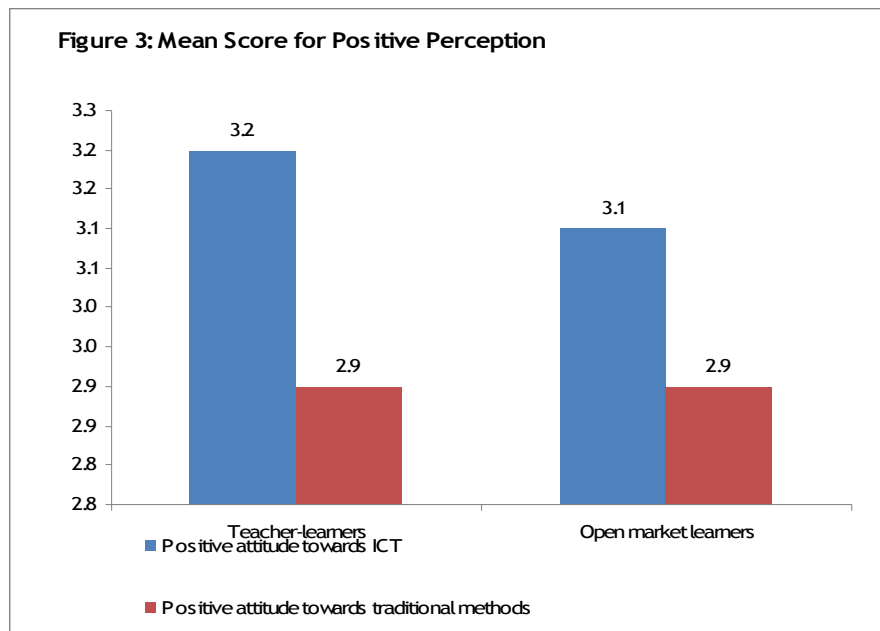
### 5.3 Positive perceptions toward the use of ICT and traditional methods in learning

A total of 20 questions were used in this study to determine learners' perceptions and attitudes towards learning with ICT versus that with traditional methods. The 20 questions were measured on a 4-point scale (4: *I totally agree*), (3: *I mostly agree*), (2: *I mostly disagree*) and (1: *I totally disagree*). In addition, a fifth category (5: *I don't know*) was provided for those learners who lacked the information or experience needed to answer the question.

Figure 3 reveals that teacher-learners scored an average of 3.2 out of 4 for "positive perception towards learning with ICT" as compared with a lower score of 2.9 points for "positive perception towards learning with traditional methods/negative perception towards learning with ICT". The mean score of 3.2 points was marginally one point higher than that for the open market learners.

Regression analysis was carried out to determine the significant factors contributing to the positive perception of learning with ICT. For the teacher-learners, the significant factors were: (i) *ability to*

use emails and (ii) the experience of using MyLMs, online discussion forums and academic support via emails, with an adjusted R-square of 20%. For the open market learners, the significant factors were: (i) the experience of using MyLMS and (ii) ability to use bibliographic database, with an adjusted R-square of 25%.

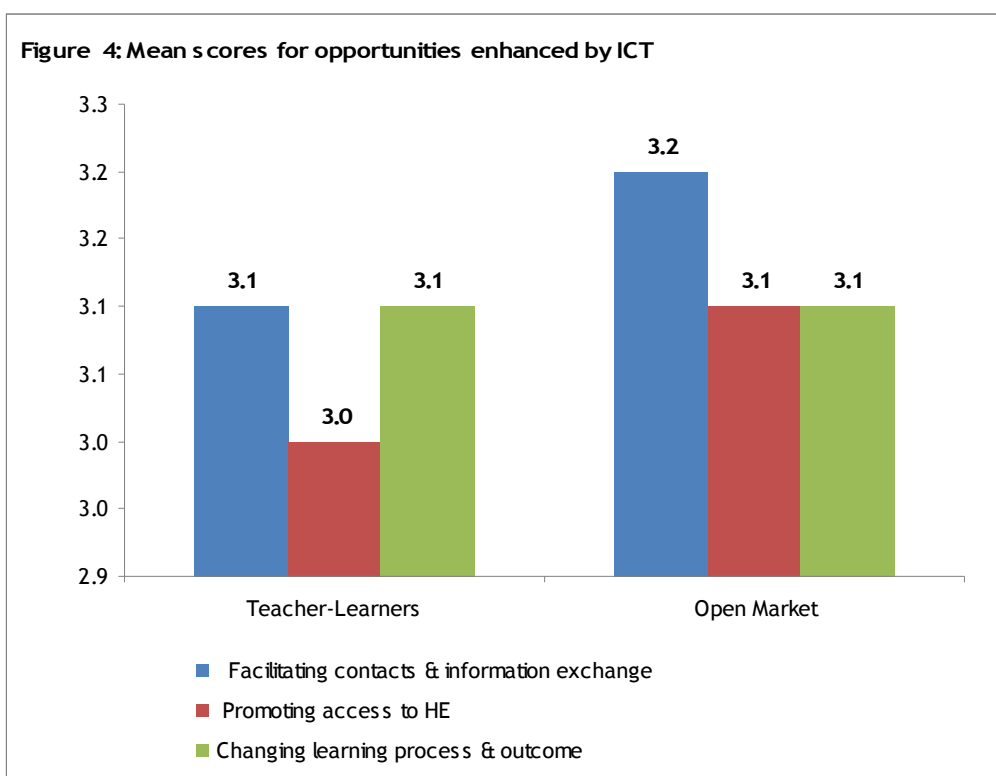


A closer examination of the individual answers reveals that the learners were especially interested in using ICT for improving learning and sharing information and ideas with people having similar interest. Their positive perception towards traditional methods of learning was supported by (a) their belief that good access to a tutor requires face-to-face contacts; (b) their stronger preference for reading from a printed text; and (c) their indication that learning with ICT was time consuming.

#### 5.4 Enhancement of opportunities by ICT

The items of opportunities were grouped into three factors: (i) facilitating contact and information exchange (ii) promoting access to higher education, and (iii) changing the learning process and learning outcome, in accordance with the groupings provided for by the SPOT+ Survey.

As shown in Figure 4, teacher-learners scored an average of 3.1 out of 4 points for 'facilitating contact and information exchange' and 'changing the learning process and learning outcome'. An inspection of the detailed information reveals that learner contacts with lecturers/tutors for advice, was the highest rated item for facilitating contact and information exchange' and the item for development of employability skills such as teamwork, problem-solving, self-learning capability and presentation skills for the factor 'changing the learning process and learning outcome'. The open market learners were more positive in their perception of ICT in 'facilitating contact and information exchange' and 'promoting access to higher education'.



## 6 DISCUSSION AND CONCLUSIONS

In general, the study found that between 40-55% of teacher-learners were able to use the four software applications on their own compared to 39-64% reported by the open market learners and 49-85% for the European learners (SPOT+, 2004; Latifah, 2008). This shows that OUM learners' ability in using ICT was lower in all 4 applications as compared with European learners. This is not unexpected since in general, the Europeans had been exposed to these applications much earlier than Malaysians. But, we are not too far behind.

The study also found that the majority of OUM learners used online forum and MyLMS frequently (39%- 74%, excluding video conferencing, which has not been used for the under-graduates), in fact more frequent than the European counterpart (18% - 49%). This is not surprising since OUM learners are in an ODL institution with a blended mode of delivery, where online learning forms a major component.

With regards to learners' perceptions on the value of ICT and its potential role in education, the teacher-learners held a fairly positive view of the different advantages that ICT can bring to learning. However, they also showed a relatively strong preference for learning with traditional method, thereby questioning the value of ICT in learning, and indicating that OUM learners have also a preference for face-to-face and teacher-based learning. This finding lends further support to the blended mode of learning as practised in OUM.

On the opportunities offered by use of ICT, learners attached a great importance to all the three groups of opportunities that is "facilitating contact and information exchange", "promoting access to higher education", and "changing the learning process and the learning outcomes". OUM learners scored at least 3.0 out of 4 points for each of the groups of opportunities. A detailed review of the item opportunities reveals that almost 50% of learners supported the opportunities of ICT in "enabling learners to contact lecturers/tutors/staffs for advice on academic questions and problems" and about 40% in "developing employability skills such as teamwork, problem-solving, self-learning capability, and presentation skills". This finding is not unexpected as OUM learners are largely working adults and they study on a part-time mode. Thus, they have to rely on the use of ICT for most part of their learning. As working adults, OUM learners also realize the importance of ICT to develop employability skills. Another interesting observation from the study was on the high rating for "promoting access to higher education" given by OUM learners, which appears to imply that they

acknowledge and support the institution's motto "education for all".

Based on a regression investigation, the study found that (a) *ability to use email* and bibliographic database; and (b) the *experience of using MyLMS, online discussion forums* and academic support via *email* are determinants of the "positive perception of the use of ICT in learning". Overall, the regression model adopted for the study has a predictive power of 20-25 percent for the two groups of learners. This finding implies that there are other variables or factors that influence the positive perception of learners towards learning with ICT. This calls for an in-depth study by incorporating other factors, so that specific improvements can be made to improve learners' attitude towards the use of ICT which will in turn lead to greater usage of ICT. Another implication is that in order to encourage OUM teacher-learners and other learners to use ICT in learning, it is vital to upgrade their ICT skills and provide them with the means to gain experience in e-learning through the institution's learning management system, MyLMS.

In conclusion, this study looked into learners' ability and experiences in using ICT in their learning and assessment of the value of ICT in helping them manage their studies. The results of this study are not unexpected, but they are relevant because they create a useful link between learners' perceptions with the many initiatives undertaken by the institution, in employing ICT for teaching and learning.

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